

PS Claim 10; Col 151; 127pp; English.

XX The present invention describes isolated DNA (I) encoding at least one  
 CC osteogenically active region of human osteogenic protein-1 in prepro form  
 CC (OP1-PP), murine OP1-PP, murine OP2-PP or human OP2-PP. Also described  
 CC are: (A) DNA related to (I) encoding a polypeptide able to form dimers  
 CC that can induce cartilage and endochondral bone formation in a mammal  
 CC when implanted in a matrix; (B) vectors containing (I) or related DNA;  
 CC (C) host cells transformed with this vector; (D) DNA (I') encoding a  
 CC prepro- or pro-OP1, and related vectors and transformed cells; (E)  
 CC osteogenic protein (II) produced by expression of transformed mammalian  
 CC cells, able to induce bone and cartilage formation; (F) mature OP1  
 CC secreted from mammalian cells following expression of the sequence that  
 CC encodes hOP1-PP; and (G) production of an active osteogenic composition  
 CC by truncating mature OP1 protein. Host cells of (C) are used to produce  
 CC proteins able to induce cartilage and bone formation, e.g. for correction  
 CC of acquired or congenital craniofacial defects or other skeletal or  
 CC dental disorders; to heal non-union fractures; to repair cartilage, e.g.  
 CC in osteoarthritis, or generally wherever bone formation is required. The  
 CC proteins induce complete development of endochondral bone, including  
 CC vascularisation, mineralisation and bone marrow differentiation. The  
 CC present sequence represents a human OP1 fragment. (Updated on 20-MAR-2003  
 CC to correct PA field.)

SO Sequence 97 AA;

Query Match 100.0%; Score 111; DB 2; Length 97;  
 Best Local Similarity 100.0%; Pred. No. 4.3e-07;  
 Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 INPVTVPKCCAPTOLNAIS 20  
 Db 52 INPVTVPKCCAPTOLNAIS 71

RESULT 4

AAW95444  
 ID AAW95444 standard; protein; 97 AA.

AAW95444;

26-MAR-1999 (first entry)

Conserved 6 cysteine skeleton fragment from human OP1.

Cystic kidney disease; renal; therapeutic; osteogenic protein; OP;  
 bone morphogenic protein; BMP; growth factor-beta superfamily;  
 polycystic kidney disease; multicystic dysplastic kidney disease;  
 ureamic medullary cystic disease; human.

Homo sapiens.

WO9850061-A1.

12-NOV-1998.

06-MAY-1998; 98WO-US009268.

07-MAY-1997; 97US-0045909P.

(BIOI) BIOGEN INC.

Gjorstrup P, Harris R;

WPI; 1999-070084/06.

Treating cystic kidney disease - using renal therapeutic agents or  
 PT sequences encoding them, especially from the osteogenic protein/bone  
 PT morphogenic protein family.

Claim 3; Page 5-6; 67pp; English.

The invention relates to methods for treating cystic kidney diseases. The

CC method comprises administering an effective amount of a renal therapeutic  
 CC agent or a polynucleotide encoding the therapeutic agent. The therapeutic  
 CC agent is preferably a soluble or membrane bound polypeptide, e.g. a  
 CC member of the osteogenic protein/bone morphogenic protein (OP/BMP) family  
 CC within a transforming growth factor-beta superfamily of proteins. It is  
 CC especially one of the polypeptides hOP1, hOP1-PP, OP1-16Ser, OP7,  
 CC OP1-16Ser, OP1-16Leu, OP1-16Met, OP1-16Ala, OP1-16Val, mOP1-PP,  
 CC hOP2, hOP2-PP, hOP2-1Ala, hOP2-Pro, hOP2-Arg, or hOP2-Ser or their  
 CC biologically active homologues. The method is used to treat humans  
 CC having, or at risk of, cystic kidney disease, e.g. autosomal recessive  
 CC (infantile) polycystic disease, multicystic dysplastic kidney disease,  
 CC uremic medullary cystic disease, and autosomal dominant polycystic  
 CC kidney disease. The present sequence represents a human osteogenic  
 CC protein 1 (OP1) species defining the the conserved 6 cysteine skeleton in  
 CC the active region

SO Sequence 97 AA;

Query Match 100.0%; Score 111; DB 2; Length 97;  
 Best Local Similarity 100.0%; Pred. No. 4.3e-07;  
 Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 INPVTVPKCCAPTOLNAIS 20  
 Db 52 INPVTVPKCCAPTOLNAIS 71

RESULT 5

AAW95681  
 ID AAW95681 standard; protein; 98 AA.

AAW95681;

25-MAR-2003 (revised)

21-AUG-1990 (first entry)

Human osteogenic protein 1(OP1-I) for osteogenic device.

Osteogenic device; osteogenic protein; endochronal bone;  
 biodegradable matrix.

Synthetic.

WO8909788-A.

19-OCT-1989.

08-APR-1988; 88US-00179406.

08-APR-1988; 88US-00179406.

15-AUG-1988; 88US-00232630.

23-FEB-1989; 89US-00315342.

07-APR-1989; 89WO-US001469.

(CREA-) CREATIVE BIOMOLECULES INC.

Opfermann H, Kuberasamp T, Rueger D;

WPI; 1989-324203/44.

Claim 9; Page 48; 69pp; English.

The protein is capable of inducing endochronal bone formation in  
 CC association with a biocompatible, in vivo biodegradable matrix. The  
 CC protein is produced by expression of the recombinant DNA in a host cell  
 CC and comprises more than one polypeptide chain, with an amino acid  
 CC sequence sufficiently duplicative of COP5, COP7, COP16 or OP1. The  
 CC protein and the implantable devices enable optimal predictable bone  
 CC formation. Clinical applications include correction of acquired and  
 CC congenital craniofacial and other skeletal or dental anomalies, induction

CC of local endochondral bone formation in non-union fractures, periodontal  
 CC apls. requiring bone formation and cartilage repair, eg in the  
 CC treatment of osteoarthritis. See also AAP95679-P95692 and AAN95097.  
 CC (Updated on 25-MAR-2003 to correct PR field.) (Updated on 25-MAR-2003 to  
 CC correct PA field.)  
 XX

SO Sequence 98 AA;

Query Match 100.0%; Score 111; DB 1; Length 98;  
 Best Local Similarity 100.0%; Pred. No. 4.4e-07;  
 Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 INPVTVPKPCAPTOLNIAIS 20  
 |||||  
 Db 53 INPVTVPKPCAPTOLNIAIS 72

RESULT 6

AAP95682  
 ID AAP95682 standard; protein; 102 AA.

AC AAP95682;

DT 25-MAR-2003 (revised)  
 DT 21-AUG-1990 (first entry)

DE Human osteogenic protein 1(OP1-II) for osteogenic device.

KM Osteogenic device; osteogenic protein; endochondral bone;  
 KM biodegradable matrix.

XX Synthetic.

XX W08909788-A.

XX 19-OCT-1989.

XX 08-APR-1988; 88US-00179406.

XX 08-APR-1988; 88US-00179406.

XX 15-AUG-1988; 88US-00232630.

XX 23-FEB-1989; 89US-00315342.

XX 07-APR-1989; 89WO-US001469.

XX (CREA-) CREATIVE BIOMOLECULES INC.

XX Oppermann H, Kuberamp T, Rueger D;

XX WPI; 1989-324203/44.

XX Claim 10; Page 49; 69pp; English.

XX The protein is capable of inducing endochondral bone formation in  
 CC association with a biocompatible, in vivo biodegradable matrix. The  
 CC protein is produced by expression of the recombinant DNA in a host cell  
 CC and comprises more than one polypeptide chain, with an amino acid  
 CC sequence sufficiently duplicative of COP5, COP7, COP6 or OPI. The  
 CC protein and the implantable devices enable optimal predictable bone  
 CC formation. Clinical applications include correction of acquired and  
 CC congenital craniofacial and other skeletal or dental anomalies, induction  
 CC of local endochondral bone formation in non-union fractures, periodontal  
 CC apls. requiring bone formation and cartilage repair, eg in the  
 CC treatment of osteoarthritis. See also AAP95679-P95692 and AAN95097.  
 CC (Updated on 25-MAR-2003 to correct PR field.) (Updated on 25-MAR-2003 to  
 CC correct PA field.)  
 XX

SO Sequence 102 AA;

Query Match 100.0%; Score 111; DB 1; Length 102;  
 Best Local Similarity 100.0%; Pred. No. 4.5e-07;

Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 INPVTVPKPCAPTOLNIAIS 20  
 |||||  
 Db 57 INPVTVPKPCAPTOLNIAIS 76

RESULT 7

AAR53360  
 ID AAR53360 standard; protein; 102 AA.

AC AAR53360;

DT 25-MAR-2003 (revised)

DT 01-JUL-2002 (revised)

DT 06-JUN-1994 (first entry)

DE Osteogenic protein OP7.

KM Osteogenic protein; bone; cartilage; matrix; osteoarthritis; repair;  
 KM vascularisation; mineralisation; differentiation.

XX Homo sapiens.

XX US5266683-A.

XX 30-NOV-1993.

XX 21-FEB-1992; 92US-00841646.

XX 08-APR-1988; 88US-00179406.

XX 15-AUG-1988; 88US-00232630.

XX 23-FEB-1989; 89US-00315342.

XX 17-OCT-1989; 89US-00422613.

XX 17-OCT-1989; 89US-00422699.

XX 22-FEB-1989; 90US-00483913.

XX 20-AUG-1990; 90US-00569920.

XX 07-SEP-1990; 90US-00579865.

XX 18-OCT-1990; 90US-00599543.

XX 18-OCT-1990; 90US-00600024.

XX 21-NOV-1990; 90US-00616374.

XX 04-DEC-1990; 90US-00621849.

XX 04-DEC-1990; 90US-00621888.

XX 22-FEB-1991; 91US-00660162.

XX 20-DEC-1991; 91US-00810560.

XX 28-JAN-1992; 92US-00827052.

XX (STYC) STRYKER CORP.

XX Kuberampath T, Ozkaynak E, Rueger DC, Pang RH, Oppermann H;

XX WPI; 1993-395405/49.

XX N-PSDB; AAO53141.

XX New pure mammalian osteogenic proteins - induce cartilage and  
 CC endochondral bone formation when in association with a matrix.  
 CC Claim 7; Col 69-72; 128pp; English.

XX This sequence is a fragment of the osteogenic protein OP1 and is  
 CC designated OP7. The sequence is a 102 C-terminal region and functional  
 CC domain of OPI. The osteogenic protein when in association with a matrix  
 CC can induce at the locus of an implant the full development cascade of  
 CC endochondral bone formation including vascularisation, mineralisation and  
 CC bone marrow differentiation. The osteogenic protein can also be used to  
 CC repair both bone and cartilage in the treatment of osteoarthritis.  
 CC (Updated on 01-JUN-2002 to add missing PA field.) (Updated on 25-MAR-2003  
 CC to correct PF field.) (Updated on 25-MAR-2003 to correct PR field.)  
 XX

SO Sequence 102 AA;

Query Match 100.0%; Score 111; DB 2; Length 102;  
 Best Local Similarity 100.0%; Pred. No. 4.5e-07;

1 INPETHKPCAPTOINAI 20  
 386 INPETHKPCAPTOINAI 405

RESULT 154

US-09-019-339B-2  
 ; Sequence 2, Application US/09019339B  
 ; Patent No. 6281195  
 ; GENERAL INFORMATION:  
 ; APPLICANT: RUEGER, David C  
 ; APPLICANT: TUCKER, Marjorie M  
 ; TITLE OF INVENTION: MATRIX-FREE OSTEOGENIC DEVICES, IMPLANTS AND  
 ; TITLE OF INVENTION: METHODS OF USE THEREOF  
 ; NUMBER OF SEQUENCES: 8  
 ; CORRESPONDENCE ADDRESS:  
 ; ADDRESSEE: James F. Haley, Jr., Esq. c/o FISH & NEAVE  
 ; STREET: 1251 Avenue of the Americas  
 ; CITY: New York  
 ; STATE: New York  
 ; COUNTRY: United States of America  
 ; ZIP: 10020  
 ; COMPUTER READABLE FORM:  
 ; MEDIUM TYPE: floppy disk  
 ; COMPUTER: IBM PC compatible  
 ; OPERATING SYSTEM: PC-DOS/MS-DOS  
 ; SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)  
 ; CURRENT APPLICATION DATA:  
 ; APPLICATION NUMBER: US/09/019,339B  
 ; FILING DATE: February 5, 1998  
 ; CLASSIFICATION:  
 ; PRIOR APPLICATION DATA:  
 ; APPLICATION NUMBER:  
 ; FILING DATE:  
 ; CLASSIFICATION:  
 ; ATTORNEY/AGENT INFORMATION:  
 ; NAME: James F. Haley, Jr., Esq.  
 ; REGISTRATION NUMBER: 27,794  
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 ; TELEPHONE: (212)596-9000  
 ; TELEFAX: (212)596-9090  
 ; INFORMATION FOR SEQ ID NO: 2:  
 ; SEQUENCE CHARACTERISTICS:  
 ; LENGTH: 431 amino acids  
 ; TYPE: amino acid  
 ; TOPOLOGY: linear  
 ; MOLECULE TYPE: protein  
 ; US-09-019-339B-2

Query Match .100.0%; Score 111; DB 3; Length 431;  
 Best Local Similarity 100.0%; Pred. No. 2.3e-07;  
 Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 Oy 1 INPETHKPCAPTOINAI 20  
 Db 386 INPETHKPCAPTOINAI 405

RESULT 155